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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/633,624 | 08/05/2003 | Takashi Kurumisawa | 116485 | 5362 |
| 25944 | 7590 | 10/25/2007 | | |
| OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850 | | | EXAMINER BODDIE, WILLIAM | |
| | | | ART UNIT 2629 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/633,624

Applicant(s)

KURUMISAWA ET AL.

Examiner

William L. Boddie

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period, for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5, 6, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5, 6, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. In an amendment dated, September 27th, 2007, the Applicants amended claims 5, 13 and cancelled claims 1-2, and 4-11. Currently claims 5-6 and 12-13 are pending.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 27th, 2007 has been entered.

Response to Arguments

3. Applicant's arguments filed September 27th, 2007 have been fully considered but they are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-6 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greier et al. (US 6,801,220) in view of Biggs (US 5,886,682).

With respect to claim 5, Greier discloses, an image display device, comprising:
a display unit (fig. 5);

a viewing angle range adjustment device that sets grayscale values of the pixels of the image data (col. 13, lines 11-32), each of the pixels including sub pixels corresponding to a plurality of colors (R,G, B in fig. 19), the viewing angle range adjustment device setting grayscale values of different color sub pixels (fig. 19) of the pixels based on different viewing angle characteristics of the different color sub pixels (col. 4, lines 11-21); and

a display device for displaying the image data on the display unit (112 in fig. 3);
the viewing angle range adjustment device sets different grayscale values for the same color sub pixels of adjacent ones of the first, second, and third pixels (clear from fig. 19 that all of the adjacent color sub pixels have alternate grayscale values).

Greier does not expressly disclose a resolution conversion device.

Biggs discloses, a resolution conversion device (fig. 2) that converts original image data (fig. 4a, for example) for a single pixel to resolution-converted image data including image data of first, second, and third pixels (clear from figs. 4a-b); and

a display device for displaying the resolution-converted image data on the display unit (34 in fig. 2).

At the time of the invention it would have been obvious to one of ordinary skill in the art to convert the incoming video signals of Greier, to automatically copy the image data to fit the resolution of the device as taught by Biggs, and subsequently adjusting the sub pixel luminances as taught by Greier.

As to the additional limitation requiring that the resolution conversion be performed prior to adjusting the viewing angle by ensuring a checkered pattern of gray

scales, this order of processes is seen as inherently required by the combination of devices. The resolution conversion process, of Biggs, essentially introduces additional data. Greier's device, however, manipulates the grayscale of each sub pixel to produce a specific pattern of grayscales amongst the sub pixels (see figs. 13-21).

If the original data were set to the checkered pattern of Greier, and then converted to the screen's resolution, by Biggs, Greier's pattern would be destroyed and the benefits of a wider viewing angle would not be enjoyed. As such it would have been clear to one of ordinary skill in the art that the resolution conversion process must inherently occur prior to instilling a wider viewing angle in the display data.

The motivation for doing so would have been to quickly resize bitmaps using only minimal processor time (Biggs; col. 2, lines 46-50).

With respect to claim 6, Greier and Biggs disclose, the image display device according to claim 5 (see above).

Greier further discloses, each subpixel corresponding to each color of R, G and B (fig. 20);

the viewing angle range adjustment device comprising:

a lookup table that stores display characteristics of the display unit for each color of R, G, and B; and a device that determines the grayscale values of the sub pixels for each color with reference to the lookup table (col. 19, lines 37-40, which details operations based on stored RGB values).

With respect to claim 12, Greier and Biggs disclose, the image display device according to claim 5 (see above).

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Greier further discloses, the viewing angle adjustment device setting the same grayscale value for two different color sub pixels of the first and second pixels (this should be clear from fig. 19 where two different color sub pixels do have the same grayscale value).

With respect to claim 13, Greier and Biggs disclose, the image display device according to claim 5 (see above).

Greier further discloses, wherein sub pixels of the single pixel after converting the resolution have the same grayscale values (col. 15, lines 49-55, for example).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William L. Boddie whose telephone number is (571) 272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Wlb
10/17/07



SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER